

**CLOSED
CITY OF HELENA LANDFILL
LICENSE NUMBER 90**

HYDROMETRICS

**DECEMBER 1993 GROUNDWATER
MONITORING DATA**

FEBRUARY 1994

**IS LOCATED IN THE GROUNDWATER
MONITORING REPORTS ARCHIVE,
BOX NUMBER 3**

RECEIVED 2/16/1994

CLOSED
CITY OF HELENA LANDFILL
LICENSE NUMBER 90

HYDROMETRICS

EVALUATION OF GROUNDWATER QUALITY
DATA, FALL 1993

FEBRUARY 1994

IS LOCATED IN THE GROUNDWATER
MONITORING REPORTS ARCHIVE,
BOX NUMBER 3

RECEIVED 2/15/1994

OFFICE OF THE
CITY OF BIRMINGHAM
IN THE YEAR 1900

RECEIVED

TO THE CITY OF BIRMINGHAM
FROM THE

1900

THE CITY OF BIRMINGHAM
OFFICE OF THE
1900

1900

**CLOSED
CITY OF HELENA LANDFILL
LICENSE NUMBER 90**

HYDROMETRICS

**1993 ANNUAL REPORT ON GROUNDWATER
MONITORING**

JANUARY 1994

**IS LOCATED IN THE GROUNDWATER
MONITORING REPORTS ARCHIVE,
BOX NUMBER 3**

RECEIVED 1/28/1994



LEWIS AND CLARK

CITY-COUNTY HEALTH DEPARTMENT

City-County Building
316 North Park
Box 1723
Helena, Montana 59624
Telephone 406 / 447-8200

RECEIVED

OCT 22 1993

MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID AND HAZARDOUS WASTE BUREAU

MEMORANDUM

DATE: October 21, 1993

TO: Lynora Wieferich, Office Manager
Wastewater Treatment Plant

FROM: Vivian Drake, Supervisor *Vivian*
Water Quality Protection District

RE: Laboratory Analysis Results - May 1993 City of Helena
Landfill Sampling Event

As we discussed yesterday, please find enclosed copies of the above referenced lab results to be sent to the respective well owners.

Peterson and Creach had no detects reported.

Hartze, Stolp, Colvin, Hartman, Gardner, and Johnson (Oakwood) had detects, but all levels are below drinking water maximum contaminant levels (MCL) for the regulated compounds.

Johnson (Peosta) has a tetrachloroethene level above the EPA MCL of 5 ug/l.

In your letter, you might wish to mention that laboratory analysis time created the delay in getting these results to the owners. I have received three inquiries about the results from Mrs. Johnson (Peosta). I will also pass the Johnson results onto the State Water Quality Bureau.

Please contact me (447-8363) if you require additional information.

cc: ✓ Pat Potts, Solid and Hazardous Waste Bureau
Steve Downs, Hydrometrics

CITY COUNTY HEALTH DEPARTMENT

RECEIVED

COPIES 2

NOTES: DISCUSS IN MEETING
AND DISCUSS IN MEETING

MEETING

MEETING

MEETING

MEETING

MEETING

MEETING

MEETING

MEETING

MEETING

MEETING

MEETING

**CLOSED
CITY OF HELENA LANDFILL
LICENSE NUMBER 90**

ENERGY LABS

**REVISED SPRING 1993 ANALYTICAL
REPORTS**

OCTOBER 1993

**IS LOCATED IN THE GROUNDWATER
MONITORING REPORTS ARCHIVE,
BOX NUMBER 3**

RECEIVED 10/8/1993

9/8/93
9⁰⁰ AM

Meeting w/ City of Helena Groundwater Monitoring.

		Phone
Pat Crowley	DHES/SHWB	444-1430.
Michael Wignot	Hydrometries	443-9150
Steve Downes	Hydrometries	" "
R. T. Hill	City of Helena	447-8455
Vivian Drake	Lewis & Clark City	447-8363
Pat Potts	DHES	444-1430

Meeting of the
Executive Committee

July

August

September

October

November

December

January

February

March

April

May

June

July

August

September

October

November

December

January

February

March

April

May

June

July

August

September

October

November

December

January

February

March

April

May

June

July

August

September

October

November

December

January

February

March

April

May

June

July

August

September

October

November

December

**CLOSED
CITY OF HELENA LANDFILL
LICENSE NUMBER 90**

HYDROMETRICS

**REVISED MAY 1993 GROUNDWATER
MONITORING RESULTS**

AUGUST 1993

**IS LOCATED IN THE GROUNDWATER
MONITORING REPORTS ARCHIVE,
BOX NUMBER 3**

RECEIVED 9/1/1993

CLASSIC
CUTTING THE FINE LINE
THE FINE LINE

HYPERMEDIATION

REVIEWED BY THE EDITORIAL BOARD
AND THE BOARD OF DIRECTORS

ALBERT EINSTEIN

TO THE EDITOR OF THE JOURNAL
AND THE BOARD OF DIRECTORS
OF THE INSTITUTE

REVIEWED BY

**CLOSED
CITY OF HELENA LANDFILL
LICENSE NUMBER 90**

**LEWIS AND CLARK CITY-COUNTY HEALTH
DEPARTMENT**

**MAY 1993 SEMI-ANNUAL GROUNDWATER
MONITORING RESULTS**

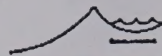
JULY 1993

**IS LOCATED IN THE GROUNDWATER
MONITORING REPORTS ARCHIVE,
BOX NUMBER 3**

RECEIVED 7/28/1993

File#
Lewis & Clark Co,
City of Helena,
grd wtr

Hydrometrics, Inc.



2727 Airport Road • Helena, Montana 59601 • (406) 443-4150 • FAX (406) 443-4155

WELL ABANDONEMENT DESCRIPTION

Project: Helena Landfill

Date: 5-7-92

Personnel: BP,CO

Well: 82-4

Abandonment Description:

Total depth and static water level were measured. TD was approximately 79 feet and SWL was about 60 feet. Bentonite pellets were slowly poured into well and annular space to provide a bentonite seal. Pellets were added very slowly and the progress up the well bore was measured frequently to ensure no bridging occurred. Pellets were added until the well bore and annulus was sealed to one foot above the water table. Three 50 pound buckets of pellets were used. Then one bag of bentonite crumbles and thirteen bags of bentonite chips were slowly added and hydrated with City tap water to seal the rest of the well to three feet below ground level. Frequent measurements were made to ensure that bridging did not occur. The top three feet of the steel casing was removed by the City and backfilled as per DNRC regulations.

All procedures and materials used were as required by DNRC regulations.

Hydrometrics, Inc.

2727 Airport Road • Helena, Montana 59601 • (406) 443-4150 • FAX (406) 443-4155

May 12, 1992

Mr. Richard A. Nisbet,
Director of Public Works
City of Helena
City/County Building
316 North Park
Helena, MT 59623

RECEIVED

MAY 14 1993

MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID AND HAZARDOUS WASTE BUREAU

Dear Dick,

The purpose of this letter is to summarize our May 11, 1993 meeting with Ms. Pat Potts from the Montana Department of Health and Environmental Sciences (MDHES), and Ms. Vivian Drake from the Lewis and Clark County Water Quality District.

The objective of the meeting was to discuss potential impacts from the landfill to groundwater quality in the area. Because several samples taken from wells near the landfill have exhibited tetrachloroethene (PCE) levels greater than the EPA specified maximum contaminant limit (MCL), the MDHES has decided that more work to define the source and extent of the contamination should be performed. As a result of the discussions during this meeting, the City and the MDHES agreed that the following tasks will be performed in the near future:

1. An inventory of wells in the city prepared by the City of Helena, will be reviewed and an appropriate well (if possible) will be chosen for water level measurement and sampling to help determine if a significant upgradient source of PCE may exist.
2. Water levels will be obtained from the well selected as described above and in former EPA wells upgradient of the landfill. Water levels will also be obtained in two MPC owned monitoring wells north of the landfill and at least one of two domestic wells north of the landfill near the west end of Cole Street (if possible). These wells will also be surveyed to USGS datum so a more comprehensive potentiometric surface map can be prepared.
3. Samples will be collected once from the chosen upgradient well, two MPC wells, and one well upgradient or crossgradient to the west of the landfill (well #28 on the landfill area inventory if possible). These samples will be analyzed for the VOC's contained in the MDHES' Table 1 parameter list for landfill monitoring.

In conjunction
w/ 5/29/93 sampling
event

Mr. Dick Nisbet
May 12, 1993
Page 2

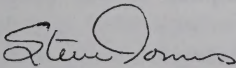
The three tasks listed above will be performed in addition to the routine groundwater monitoring for the Helena Landfill which is scheduled for the last week in May. As you suggested, we will meet again to discuss the Helena Landfill groundwater situation after these tasks are completed and the analytical data has been received and reviewed by all parties.

Also discussed was the potential impacts that the MDHES' new groundwater rules may have on the Helena Landfill. These rules will likely cause Helena Landfill to begin an assessment monitoring program which would include significantly more rigorous sampling and analytical work than is now required. Also discussed was the probability that the promulgation date for "Subtitle D" may be postponed for six months. This may cause a change in the effective date in the MDHES new rules as well, however the exact impact to the MDHES' rules is not known at this point.

We also discussed the role of the water quality district in the City of Helena Landfill's groundwater monitoring. It was decided that the District would do all of the domestic well sampling required by the City, where special sampling equipment would not be necessary. In addition, all analytical results would be sent to the District directly from the lab and the District would distribute the results to the City and the MDHES. Hydrometrics will provide the District with all field notes obtained during the monitoring well sampling.

Thank you for taking the time to attend this meeting and voicing the City's concern over the groundwater issues related to the landfill. We look forward to working with you to resolve the City's groundwater concerns. Please call if you have any questions.

Sincerely,



Steven K. Downs
Senior Engineer

Copy: Ms. Pat Potts, MDHES
Mr. Ted Hill, City of Helena
Ms. Vivian Drake, Lewis and Clark County

Lewis & Clark #90

ROUTE SLIP

DEPARTMENT OF HEALTH & ENVIRONMENTAL SCIENCES

TO:

DATE:

1.

2.

3.

☒

Approval

☐

Comment

☐

Necessary Action

☐

Note and Return

☐

Note and File

☐

Investigate

☐

Prepare reply

☐

Signature

☐

See Me

☐

As requested

☐

For your information

☐

Per Conversation

REMARKS:

1+c helena.mef

FROM:

mailed
10-25-93
lh

DEPARTMENT OF
HEALTH AND ENVIRONMENTAL SCIENCES

Solid and Hazardous Waste Bureau

Solid Waste Program

MARC RACICOT, GOVERNOR 406/444-1430

FAX # (406) 444-1499



STATE OF MONTANA

OFFICE 836 Front Street
LOCATION Helena, Montana

MAILING PO BOX 200901
ADDRESS: Helena, MT 59620-0901

October 20, 1993

Steve Downs
Hydrometrics, Inc.
2727 Airport Road
Helena, Montana 59601

RE: **CITY OF HELENA CLASS II LANDFILL, LEWIS & CLARK COUNTY - LICENSE NO. 90 - HYDROGEOLOGIC MEETING ON OCTOBER 20, 1993.**

Dear Steve:

Following our meeting today, I was able to glean a bit more knowledge from the Administrative Rules of Montana (ARM), Title 16, Chapter 14, Subchapter 7 that might be helpful to you. Regulatory questions that were brought up in this meeting which I was unable to answer definitively are addressed in greater detail below. They are arranged by subject, generally according to a proposed hypothetical, worst-case order of applicability:

Relevant Point of Compliance (RPOC) ARM 16.14.708(1)(e)

Please refer to the attached copy of a map of the site. The RPOC has been tentatively outlined on this map, and is designated as no greater than 150 meters from the waste management boundary, on property owned by the owner/operator of the facility. The Department will require a more accurate map from the City defining this RPOC in relation to other adjoining property owners (refer to the dashed/question-marked lines which may be some of the questionable areas of City ownership). Within this 150 meter perimeter of the site, or the waste management boundary where the adjacent property is not owned by the City, the quality of the ground water must be cleaned up, and/or maintained at concentrations at or below . . .

GROUND WATER PROTECTION STANDARDS (GWPS) ARM 16.14.708(5)(a) through(d). GWPS are determined based on a statistically significant increase over any of the following standards:

* Maximum Contaminant Levels (MCLs) for those constituents for which approved U.S. EPA primary drinking water standards have been published, as well as those constituent concentrations which are addressed in the Montana Ground Water Quality Standards. (Secondary drinking water standards may also apply when use of the potentially impacted aquifer(s) are used for domestic supply.)

* Background concentrations, if no MCLs have been established for a particular constituent.

Therefore,

1. If constituent concentrations are at, or below background for 2 consecutive semi-annual sampling events, return to **DETECTION MONITORING** [ARM 16.14.708(2)].

2. If constituent concentrations are above background, but below the GWPS, continue **ASSESSMENT MONITORING** [ARM 16.14.708(3)].

3. If constituent concentrations are statistically significant above the GWPS [ARM 16.14.708(4)], the following requirements shall be met:

* Characterize the nature and extent of the plume(s). This will include installing additional monitoring wells as needed [ARM 16.14.708(4)(a)(i)]. Characterization and delineation of the contaminant plume(s) will undoubtedly be necessary, and will be required beyond the RPOC.

* Install a minimum of 1 monitoring well "in the direction of contaminant migration", and sample it for Table 2/App.II [ARM 16.14.708(4)(a)(ii)].

* Notify all persons who own land or reside on land overlying plume(s), if contaminants have migrated off-site [ARM 16.14.708(4)(a)(iii)].

* Initiate assessment of corrective measures within 60 days [ARM 16.14.708(4)(a)(iv)], completion of which is not to exceed 60 additional days [ARM 16.14.708(6)(a)].

To back-up and explain how a facility becomes subject to **ASSESSMENT MONITORING**, the following criteria will initiate Assessment Monitoring at the City of Helena Landfill after the normal Fall 1993 sampling event which will consist of analysis of the parameters/constituents on Table I of the draft ARM 16.14.706. Monitoring wells with one or more constituents statistically exceeding GWPS will initiate Assessment Monitoring. Sampling of all monitoring wells in the network for all of the Table 2/App.II constituents will be required within 90 days from the

City of Helena Landfill
Page 3
October 20, 1993

determination of the statistical exceedence [ARM 16.14.708(1)(a)(ii)]; also, see ARM 16.14.708(1)(a)(i) which requires notification of the Department of the statistical exceedence 14 days from the determination.

Assuming any of the constituent concentrations are detected in the Table 2/App.II sampling event, the facility will be required, according to ARM 16.14.708(1)(a)(v) to:

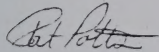
- (A) Sample all wells for ALL Table II/App.II constituents at least **annually**;
- (B) Sample all wells within 90 days and at least semi-annually thereafter for all Table I constituents and all Table II constituents detected in the initial, or subsequent annual, Table 2/App.II sampling.

[NOTE: The above rule (B) was revised by requirement of the U.S. EPA for Program approval. It will become effective following the public comment period (which ends on October 29, 1993), and final publication. This item will be revised in the ARM. Attached is this revision.]

If a constituent is detected from the Table 2/App.II sampling event, 4 independent (i.e. separate sample containers) samples from each well will be required to be analyzed for the particular constituent(s) detected from the Table 2/App.II sampling [see ARM 16.14.708(1)(a)(v)(D)]. These 4 required samples will need to be collected promptly following the detection of the additional constituent(s).

The above points were only intended to highlight those items of concern which needed further explanation on my part. I hope this information will be helpful. If you have any questions, please give me a call. I am looking forward to our meeting in the near future, and the submittal of the Annual Report for the City of Helena Landfill, prior to the November (Fall) 1993 sampling event.

Sincerely,



Pat Potts

Environmental Specialist

Attachments - Map
 Rule Revision

cc: Ted Hill, City-County Building, 316 North Park, Helena, MT 59623

Vivian Drake, City-County Building, 316 North Park, P.O. Box 1723, Helena, MT 59624
path: swl&chelena.met
file: Lewis & Clark Co./City of Helena (closed)/grd wtr (correspondence)

specified in (2) of this rule are satisfied. During continued assessment monitoring the owner or operator must:

(A) Sample all wells for all Table 2 constituents at least annually;

(B) Sample all wells within 90 days and at least semi-annually thereafter for all Table 1 constituents and all Table 2 constituents detected in the initial, or subsequent annual, Table 2 sampling; ~~and~~

(C) Collect and analyze at least one sample from each well (background and downgradient) during each sampling event; and

(D) For any constituent detected in the downgradient wells as a result of the Table 2 analysis, collect and analyze a minimum of four independent samples from each well (downgradient and upgradient) to establish background for the constituents detected.

(b)-(j) Remain the same.

(2)-(9) Remain the same.

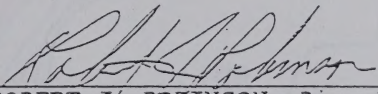
AUTH: 75-10-204, MCA; IMP: 75-10-204, 75-10-207, MCA

3. The department is proposing these amendments to the rules in order to gain approval for the state's solid waste management program, under Subtitle D of the Resource Conservation and Recovery Act, from the U.S. Environmental Protection Agency. Such approval is necessary if the state is to retain primary responsibility - rather than EPA - for enforcing its own solid waste program.

4. ARM 16.14.517, which can be found on page 16-742 of the Administrative Rules of Montana, is proposed to be repealed because the purpose of the rule has been fulfilled and there is no further purpose for the rule to serve.

5. Interested persons may submit their data, views, or arguments concerning the proposed amendments, either orally or in writing, at the hearing. Written data, views, or arguments may also be submitted to Pat Crowley, Department of Health and Environmental Sciences, Cogswell Building, Capitol Station, Helena, Montana 59620, no later than October 29, 1993.

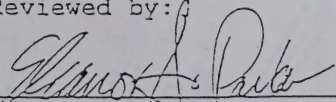
6. Dayna Shepherd has been designated to preside over and conduct the hearing.



ROBERT J. ROBINSON, Director

Certified to the Secretary of State September 20, 1993.

Reviewed by:



Eleanor Parker, DHES Attorney



ROUTE SLIP

DEPARTMENT OF HEALTH & ENVIRONMENTAL SCIENCES

TO:

Proofst

DATE:

4/20/93

1.

Pat C ~~PL~~

2.

Jon D ~~JD~~

3.

Roger/Daane ^{Ref} ~~DLR~~

- | | | |
|--|---|---|
| ☒ Approval | ☐ Comment | ☐ Necessary Action |
| ☐ Note and Return | ☐ Note and File | ☐ Investigate |
| ☐ Prepare reply | ☐ Signature | ☐ See Me |
| ☐ As requested | ☐ For your information | ☐ Per Conversation |

REMARKS:

sw/hele.let

FROM:

3
p

mailed
4-22-93
DH

DEPARTMENT OF
HEALTH AND ENVIRONMENTAL SCIENCES
Solid and Hazardous Waste Bureau
Solid Waste Program
(406) 444-1430

MARC RACICOT, GOVERNOR

FAX # (406) 444-1499

STATE OF MONTANA

OFFICE LOCATION 836 Front Street
Helena, Montana

MAILING ADDRESS: PO BOX 200901
Helena, MT 59620-0901

April 22, 1993

Mr. Dick Nisbet
City of Helena
316 North Park
Helena, Montana 59623

RE: CITY OF HELENA CLASS II LANDFILL, LEWIS AND CLARK COUNTY -
LICENSE NO. 90 - GROUND WATER MONITORING RESULTS.

Dear Mr. Nisbet:

It has come to the attention of the Montana Department of Health and Environmental Sciences Solid Waste Program (the Department) that the City of Helena has not submitted ground water monitoring analytical results since the sampling event in May 1992. According to the Administrative Rules of Montana (ARM) 16.14.706(10), sampling results and water level elevation data are required to be submitted to the Department within 90-calendar days after sampling.

In the event of an exceedence [over background and/or maximum contaminant levels (MCLs)] of any of the parameters and/or constituents required to be monitored in ARM 16.14.706 Table 1 (with the inclusion of tetrachloroethene), the owner/operator of a facility is required to notify the Department in writing within 15 calendar days from their receipt of the analytical results from the laboratory [see ARM 16.14.708(4)].

If an exceedence of Table 1 parameters/constituents has occurred the facility will be required to take one or more of the following actions, according to ARM 16.14.708(1):

- (a) re-sample one or more of the monitoring wells,
- (b) increase the frequency of ground water sampling,
- (c) conduct monitoring for additional parameters,
- (d) install additional monitoring wells to define the nature and extent of contamination, or
- (e) prepare a ground water corrective action plan including

City of Helena Landfill

Page 2

April 22, 1993

an assessment of the impacts and a schedule of implementation for corrective action.

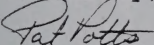
Also, keep in mind that an annual report will be required following this Spring's sampling event. An annual report consisting of the following, is required according to ARM 16.14.707(1)(a):

"all ground water sampling, water level measurements, modifications to the monitoring well network, inspections, maintenance activity and construction or operational events at the facility that may affect the monitoring well network".

The Department will require the City of Helena to submit Fall 1992 analytical sampling results and water level elevation data within 15-calendar days from the date of this letter.

The lack of a required data submittal (e.g. analytical results) to the Department within the regulated period of time, is a violation of 75-10-228, of the Montana Code Annotated, subject to a civil penalty not to exceed \$1,000 per day for each day that the violation exists.

Sincerely,



Pat Potts

Environmental Specialist

cc: Steve Downs, Geological Engineer, Hydrometrics, Inc., 2727 Airport Road, Helena, MT 59601

Vivian Drake, 316 North Park, P.O. Box 1723, Helena, MT 59624

Howard Reid, R.S., City-County Building, 316 North Park, P.O. Box 1723, Helena, MT 59624

path: sw\hele.let

file: lewis&clarkco/city of helena/grd wtr

